

Customer No.: 31561  
Application No.: 10/064,703  
Docket No.: 9458-US-PA

### Claim Amendment

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

1. (currently amended) A method for a deposition of a thin film using a plasma enhanced chemical vapor deposition process, applicable in the deposition of the thin film on a substrate placed in a chamber, the method comprising:

- a. performing the plasma enhanced chemical vapor deposition process to form the thin film on the substrate;
- b. removing the substrate from the chamber;
- c. performing a cleaning process in the chamber without the substrate;
- d. performing a pre-deposition process to isolate contaminants;
- e. performing a discharge plasma treatment for reducing accumulated charges in the chamber;
- f. loading another batch of substrate into the chamber; and
- g. repeating step a. to step f, wherein the step c to the step e are conducted sequentially.

2. (original) The method of claim 1, wherein performing the cleaning process includes passing a cleaning gas into the chamber.

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3. (original) The method of claim 2, wherein passing the cleaning gas into the chamber includes passing a fluorine-based cleaning gas.

4. (original) The method of claim 3, wherein passing the fluorine-based cleaning gas includes passing a  $\text{NF}_3$  gas.

5. (original) The method of claim 1, wherein depositing the thin film includes depositing an insulation material layer.

6. (original) The method of claim 5, wherein depositing the thin film includes depositing a high resistance thin film.

7. (original) The method of claim 6, wherein depositing the high resistance thin film includes depositing intrinsic amorphous silicon.

8. (original) The method of claim 1, wherein a gas used in the discharge plasma treatment includes a hydrogen gas.

9. (original) The method of claim 8, wherein a gas used in the discharge plasma treatment includes a nitrogen gas.

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10. (original) The method of claim 1, wherein a gas used in the discharge plasma treatment includes an argon gas.

11. (original) The method of claim 1, wherein a gas used in the discharge plasma treatment includes a helium gas.

12. (previously presented) The method of claim 1, wherein a gas used in the discharge plasma treatment is selected from the group consisting of a hydrogen gas, a nitrogen gas, an argon gas and a helium gas.

13. (currently amended) A method for a thin film deposition using a plasma enhanced chemical vapor deposition (PECVD) process, the method comprising sequentially:

performing a plasma enhanced chemical vapor deposition (PECVD) in a chamber to form a thin film on a first batch of substrate;

removing the first batch of substrate from the chamber;

performing a cleaning process on the chamber;

performing a pre-deposition process on the chamber to isolate contaminants;

performing a discharge plasma treatment of the chamber for reducing accumulated charges in the chamber;

placing a second batch of substrate into the chamber; and

performing the plasma enhanced chemical vapor deposition to form the thin film on the second batch of substrate.

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14. (original) The method of claim 13, wherein performing the cleaning process includes passing a cleaning gas into the chamber.

15. (original) The method of claim 14, wherein passing the cleaning gas into the chamber includes passing a fluorine-based cleaning gas.

16. (original) The method of claim 15, wherein passing the fluorine-based cleaning gas includes passing a  $\text{NF}_3$  gas.

17. (original) The method of claim 13, wherein to form the thin film includes to form an insulation material layer.

18. (original) The method of claim 13, wherein to form the thin film includes to form a high resistance thin film.

19. (original) The method of claim 18, wherein to form the high resistance thin film includes to form intrinsic amorphous silicon.

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20. (previously presented) The method of claim 13, wherein a gas used in the discharge plasma treatment is selected from the group consisting of a hydrogen gas, a nitrogen gas, an argon gas and a helium gas.